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Agricultural.

DETERIORATION OF SOILS.

One of the very serious questions which comes to the front in one farm or another whenever the agriculture of the future is considered, is the unsettled problem, whether the soil is gradually losing by waste, or by the absorption of its resources into the growing crops, so that some extra effort or some outside application of fertilizers must be made, in order to sustain it in its present condition, or to restore it to its virgin strength again. The whole matter hinges upon the question as to whether lands under proper rotation and cultivation can be made to sustain their fertility, or even to increase it. Opinions sustaining the affirmative of this question will be counted as heresy by those who estimate the loss to the soil by the amount of those elements which an analysis of a grain crop shows it to contain. This opinion is held by theorists, and those who farm it by proxy. The position is doubtless true on lands kept in constant cultivation without that rest which a rotation gives. The farmer's garden and such lands near large markets as are devoted to the growth of vegetables, are illustrations of this. In either case the ground fails to respond to large yields after a few years of cultivation, although it may have a yearly application of manure. In such cases doubtless commercial fertilizers prove beneficial. But on farms where a judicious system of rotation is kept up, and fields frequently lie in meadows or pasture undisturbed by the plow, I believe that chemical manures are entirely unnecessary and valueless. After a year or two of drouth, such as we have just passed through, farmers easily believe the dolorous prophecy of failing fertility, and have forebodings of desolate fields and empty barns. To believe that each crop takes from the field some valuable properties of plant growth, that must be replaced directly in kind, and in compensating proportions, is to concede that there is danger of ultimate starvation for the race, for it would be utterly impossible to repay the yearly waste of those elements contained in the grain, grass, or other products taken from the farm. The wisdom which provided a supply at the first was not so short-sighted as to leave the earth exposed to such an exigency. There is a constant replacement of those wasted energies by the chemistry constantly going on in undisturbed soil. A drouth checks the operations of this recuperating process, and the soil seems to and does really decline in fertility when a certain degree of moisture is absent. Detecting this, the farmer concludes that absolute failure has begun to manifest itself, and so goes off in a statement to confirm the productions of those scientists who hold to the theory of constant and absolute waste from the harvested crops.

The formation of soil was an effort of nature, which always tends to finish and furnish its articles round and complete; and a soil that is capable of being improved under proper cultivation, is capable of enduring itself with all the elements suitable for the purpose for which it was created at the first. The farmer who is and has been cognizant of an actual improvement in his soil since the first clearing, need have no fears for the future of his fertility, even though the art of making "phosphates" were lost, and the bone grinding mills had shut down for good. All the stories we hear about desolating productions at the west, have come from repeated collection of the same crop, with no rest for the land, to give it time and opportunity to recuperate. A rotation having grass and clover as its starting and ending point, will attend to its own chemical supplies and ask no aid

from the manufacturer to assist it in the work of growing a crop. A decline in fertility is not a natural process, but comes through a misuse and abuse of the gifts of nature. My neighbor expressed the opinion the other morning that we had no moral right to abuse the soil and to leave it poorer than we found it. It was a talent that we should improve, and if possible, hand over ten talents to our successor.

A. C. G.

POTATOES.

Fifty years ago what is now called the potato rot or blight had never been known. The varieties generally cultivated in the United States at that time were the Mercer, the Peachblow and the Blue Skin. A few other kinds were grown in a small way, but the above three were planted for a main crop. The Mercer (or, as it was sometimes called, the Blue Mercer, owing to the light blue or purple streaks occasionally shown on the skin and outer flesh) was the main kind for an early crop and was considered the par excellence of potatoes. And well did they deserve the name, and no other variety introduced since, not even excepting the Early Rose, has ever filled their place, either for productiveness or fine table qualities. But now there is not one to be found in this country. After long years of culture they were the first to succumb to the potato blight. The Peachblow and Blue Skin were good and productive sorts and mostly planted for late crops. Many new sorts have been brought out since with varied success, but were mostly discarded after one or two years' trial. Finally the Early Rose made its advent. This valuable potato has proven a great blessing not only to the United States but also to other countries, and had it not been for the introduction of the Early Rose thousands of people in the world would have suffered for the want of potatoes to eat. It is the only one out of many hundreds since tried that has filled the place of the Blue Mercer of fifty years ago. After many years of successful cultivation this too has nearly run its course; and in many localities has so much degenerated that potato growers have almost abandoned it and are looking for something to fill its place for a main crop potato. Hundreds of new sorts have been tried with loud sounding names and great praise by their introducers, but none has ever yet been found that could compete with the Mercer of fifty years ago, or the Early Rose of more recent date. It has been our aim and greatest desire for the last fifteen years to discover a potato that would take the place of and be as good and productive as these two well known sorts, the only really valuable and good kinds that we have known in our forty years' farming; and with this object in view we have tried about all we have ever heard of, besides raising many new seedlings ourselves. Some few have proven excellent and valuable, but nearly 99 out of every 100 have been of little account, as a reliable main crop potato. After so many years' testing, with much labor and expense, we have been rewarded by discovering a variety, which, after three years' thorough trial by ourselves, and others in various sections of the United States and Canada, we think fully equal to the Blue Mercer or Early Rose. Boley's Northern Spy originated with Mr. John Boley, State of New York, who claimed such unusual merits for his new potato that we were induced to give it a trial. The first year convinced us that it was a wonderful potato and we at once began negotiations for the control of his whole crop, which unfortunately was quite small. After another year's trial we were fully convinced that we had found a treasure we had long been looking for and began sending them out in small quantities to different sections of the country to find out if they would do for others as well as they did for us. From over 300 trials we have received the most satisfactory and convincing reports without one exception. The yield computed by the acre ranges from six to eight hundred bushels, one to two persons claiming 1,000; and all were ready to assert that the Northern Spy is fully equal to the Rose in attractive appearance and fine table qualities. Our supply of this splendid new potato is still quite limited, but we intend to distribute it as widely as possible that others may receive the benefit of what we claim to be the best and most productive potato that has been discovered since the advent of the Early Rose.

SAMUEL WILSON.

MECHANICVILLE, Pa.

A Remedy Suggested for Those Hogs.

BYRON, Jan. 15, 1889.

To the Editor of the Michigan Farmer.

In your issue of Jan. 12th, I notice that H. B. is having trouble with his pigs. As I have had some experience similar to his, I will venture to suggest the trouble is caused by too exclusive diet of corn. It would be well to bathe the projecting parts with a strong decoction of white oak bark before crowding them back. Change feed, giving soft, sloppy food for a time, and supply them liberally with wood coals and ashes. Isolate those affected, as they sometimes mutilate the projecting parts and are killed in that way. Report progress to FARMER. J. D.

The annual Farmers' Institute for Kalamazoo County will be held at Richland, Wednesday and Thursday, February 6th and 7th. An excellent programme has been arranged. The meetings will be held in the Presbyterian Church.

Presbyterian Church.

WIREHEAD, the State Board of Agriculture.

STATE AGRICULTURAL SOCIETY.

Annual Meeting of the Executive Committee.

The annual meeting of the Executive Committee of the State Agricultural Society was held in this city the past week. President-elect Palmer was unable to be present, his senatorial duties detaining him at Washington.

The following members were present: President Hyde, Messrs. Hamford, Lessiter, Sharp, Smith, Burrington, Wood, Shoemaker, J. P. Gard, Young, Butterfield, Watkins, Wells, Phillips, Fralick, Parsons, and the Secretary.

President Hyde, in his address, gave a detail of the business of the year, and the present position of the Society. The treasury is practically empty. He favored a permanent location hereafter. Only attractive exhibitions could be made to pay, and he favored anything which would add to the attractiveness of the annual fairs of the Society.

Secretary Sterling's report showed the amount of premium checks issued during the year to be \$10,716.

The report of the Business Committee showed the expenses of the Society for the year, outside of premiums, to have been \$3,785.61.

The reports of the various department superintendents were received and read, detailing the character of the exhibits in their various departments. In his report Mr. L. D. Watkins, of the Horticultural Department, said:

"This report may seem discouraging for the future of this department; but the exhibition would have been as full and select as ever made in the State. Had it not been for the unparalleled drouth, lateness of the season and early date of the Fair, making a full month's difference in the maturity of fruit from that usually shown at the State Fair."

It is significant that there was not a plate of ripe fruit shown, except of the earliest varieties. Fruit-growers nearly all reported that their fruit was so late and unripe as to be totally unfit for exhibition.

I would recommend a revision in all classes of Division B. The list as used in 1888 was a copy of that made by the State Horticultural Society which, though it may have met and filled the wants of that Society, is not such as will bring out the best exhibit for our Society."

Resolutions of respect to the memory of Hon. Witter J. Baxter were reported and adopted; also to the memory of Hon. H. C. Sherwood, at one time President of the West Michigan Agricultural Society.

A delegation from Jackson was present and were invited by the President to address the committee. Messrs. J. C. Richardson, D. S. Smith and W. J. G. Dean accepted the invitation, and invited the Society to hold its annual fair at Jackson. The gentlemen stated that the people of the Central City were anxious to have the fair, and would subscribe liberally for it.

Upon motion of Mr. Dean the following was adopted:

Resolved, That the Society is desirous of receiving propositions for either a permanent or temporary location. Proposals may be addressed to the secretary until March 1.

Mr. Sharp offered the following, which was adopted:

Resolved, That President Palmer be authorized to appoint, after adjournment, the executive superintendents and the balance of the standing committees, and he is requested to name the business and transportation committees at his earliest convenience.

Be it further resolved, That the President appoint a permanent location committee, to consist of seven members, of which he shall be chairman.

Treasurer Dean submitted his annual report, which showed the receipts from all sources during the year to be \$16,429.75; cash on hand at beginning of year, \$3,839.06; disbursements, \$19,413.84; balance on hand, \$854.97.

An invitation from the Merchants' and Manufacturers' Association of Jackson, to hold their next meeting at that place, free of expense, was accepted.

The following resolution, offered by Mr. Fralick, was adopted:

Resolved, That President Hyde, the treasurer, secretary, and present business and transportation committees be appointed by a special committee to correspond with President Palmer, and to meet him at his earliest convenience in consultation, with full power to take action as in their judgment will be for the best interests of this Society.

Mr. Butterfield offered the following, which was adopted:

WHEREAS, the State Board of Agriculture



BOLEY'S NORTHERN SPY POTATO.

ture have put in their estimates for the use of the Agricultural College to be placed before the Legislature, the sum of \$3,000, for the purpose of erecting a suitable building for the use of the Agricultural Department of the College; therefore,

Resolved, That this Board respectfully request of the present Legislature the appropriation of the said sum for the purpose mentioned.

The Committee on Rules, Messrs. Hamford, Fifield and Burrington, made their report.

The principal changes were as follows: In Section 1, Article 9, which was amended to read "Competition in all Departments open to the World," unless specially excepted.

In Division B, Horses in Class 9 are required to be registered in the Cleveland Bay Stud Book of America, or the French Coach Horse Stud Book of America.

In Division C, South Down Record stricken out; the Ohio Merino Register added, and exhibitors allowed fifteen entries instead of fifteen animals.

In Division D, fifteen entries in place of fifteen animals allowed, and Swine in the Essex class required to be registered, or be eligible to registry, in the Essex Record.

In Division E, exhibitors are required to furnish coats.

Mr. Sharp offered the following resolutions, which were adopted after a debate:

Resolved, That this Committee recommend the enactment by the present Legislature of a law providing for the inspection alive and on foot, at the place of slaughter within the State, of all neat cattle intended for consumption as human food, within the cities and villages of Michigan.

Resolved, That this Committee also recommend the enactment of a law requiring the managers of our State institutions to purchase the meat supply therefrom from the product of animals fattened and slaughtered in Michigan.

The committee on premium list made their report, and recommended the following changes and additions, which were adopted:

Division A adopted, with Herd and Sweepstakes Premium of Classes 2 and 5 stricken out.

The following resolution was adopted:

WHEREAS, This Board has learned semi-officially that the American Shorthorn Breeders' Association proposes to place at the disposal of this Society a sum of money for a prize of \$1,000 for the dairy; therefore,

Resolved, That in case this offer is made by the Shorthorn Association, it be accepted by this Board, and the same be arranged and placed in the Premium List of this year by the Secretary and Superintendent of Cattle in accordance with terms offered.

Division B adopted with following changes from list of 1888: In Classes 19 and 21, five years old, stricken out; Class 19 and 21 stricken out. Slight change in premiums in Classes 12, 17 and 20.

Speed department: For stake races for colts to be trotted under the rules of the Michigan Horse-Breeders' Association, one for two-year-old colts; one for three-year-old colts; one for four-year-old colts, with \$5 to accompany nomination to be made March 15, 1889; second payment of \$5 to be made May 1, with the final payment of \$10 to be paid September 2, 1889; and that the Society add one hundred dollars to each stake. Open to Michigan only. A sum not to exceed \$2,000 is offered for speed, the arrangement and division to be made by a special committee to consist of A. J. Dean, C. W. Young and Eugene Fifield, the races to be made under the direction of the Superintendent of Horses.

Division C adopted with the following changes: Classes 24, 26 and 28 stricken out; Class 30 to read: "Columbia and Lincoln"; premiums in Class 30 made same as in Class 23; premiums in Class 32 reduced to \$5.00, \$5.00 and \$3.00.

In Division E five new varieties are added.

In Division H list revised and \$18 added.

In Division C it was decided to place Hampshire Downs again on the list, with same premiums as last year.

Mr. J. C. Sharp offered the following resolutions, which were adopted:

WHEREAS, Large appropriations have been made by former legislatures of this State for the purpose of erecting a building for the Chemical, Botanical, Entomological, Veterinary, Mechanical and Horticultural departments of the Michigan Agricultural College, aggregating many thousands of dollars for each of these departments, while the Agricultural Department, according to the Governor's recent message, has been allowed only the meagre sum of \$400 for this purpose; and

WHEREAS, We believe that the Agricultural Department, at an Agricultural College, in the very nature of things, should be kept fully abreast of all others in its equipment for work, that it may stand on an equal plane with them; and

WHEREAS, The State Board of Agriculture

has been endorsed by the State Grange at its recent session, by the Michigan Sheep Breeders' Association, the Holstein, Shorthorn, and Galloway Cattle Breeders' Association, at their recent annual meetings and

WHEREAS, We believe that this appropriation will greatly contribute to the efficiency of the Agricultural Department and is in accord with the advanced public sentiment of the leading agricultural organizations in this State. Therefore be it

Resolved, That, as the Executive Committee of the State Agricultural Society, we hereby cordially endorse the action of the Board of Agriculture in asking for this appropriation, and we hereby most respectfully petition the Honorable, the Legislature of Michigan, now in session, to make such appropriation, feeling assured that the best interests of the College and of the State will be served by such action. And your petitioners will ever pray.

Resolved, That the Secretary of this Committee forward a copy of this preamble and resolutions to the President of the Senate and the Speaker of the House of Representatives at Lansing, with the request that they be printed in the Legislative Journal, and referred to the proper committee.

After a free discussion of the matter, the following resolutions were adopted:

Resolved, That this Society shall join with all other agricultural societies in this State in requesting of the Legislature an appropriation annually to aid the various agricultural societies to an amount equal to twenty per cent of the premium lists paid by the several societies, and that the secretary of this Society be and is hereby directed to notify the presidents and secretaries of each agricultural society in this State of this movement.

Resolved further, That a committee of five, consisting of Messrs. Turner, Chamberlain, Ball, Wells and Watkins, be and is hereby appointed to formulate and urge such legislation, and that the secretary be and is hereby directed to arrange for the circulation and signing of proper petitions, by obtaining the aid of the officers of each agricultural society and otherwise.

The meeting then adjourned sine die.

LINCOLN SHEEP.

To the Editor of the Michigan Farmer.

Quite a number of persons in this part of Barry County have purchased Lincoln rams to cross on fine wool sheep for the purpose of raising mutton lambs. As parties selling these rams tell some pretty large stories about the weight of lambs at six months old, and weight of wool sheared from breeding ewes, will you please tell us through the FARMER about these sheep and oblige.

GRANGER.

The Lincoln is the largest of the English long wool breeds. It was originally a rather coarse, slab-sided sheep, and kept on the low lands of the county from which it derives its name. After the great improvement made in the Leicester by Bakewell and his followers, it was undoubtedly used to improve the coarse Lincoln, and with excellent results both as regards form and fleece. It still maintains its position as first in size of the English breeds, while its coarse open fleece has been changed to one of great density, fineness and lustre. Its fleece is next in fineness to the Hampshire Down, standing ahead of the Leicester, Cotswold and Oxford Down, which come in the order named. As a distinct breed the Lincoln first came into prominence about twenty-five years ago, and it is held in high esteem in some portions of England, and also in the Canadian Provinces, as a great producer of both wool and carcass. In fact an old Canadian flock master told the writer of this the past autumn, while some Canadian Leicester were being examined at an agricultural fair, that most of them had Lincoln blood, rams of that breed having been used to increase their size. But he did not regard the Lincoln as likely to reproduce itself as generally as either the Southdown or Leicester, which he regarded as forming the foundation of the improvement in the middle and long wool breeds. The fleece of the Lincoln is generally slightly shorter in the staple than either the Leicester or Cotswold, and the fibre slightly stronger. The Lincoln must have good care and very generous feeding to do well. It is the product of rich pastures and high feeding, and to get good results these must be assured to it. In sections subject to drouth we do not believe the Lincoln will be found desirable, while on rich bottom lands it will do all right.

Franklin Wilson, of Mundy, Genesee Co., sold nine dressed pigs at his recent sale whose weights aggregated 8,000 pounds. One was an April pig that weighed 888 pounds.

RAIL AND WIRE FENCES.

WILLIAMSTON, Jan. 13th, 1889.

To the Editor of the Michigan Farmer.

I would like to ask a question through your paper, as I am an old subscriber. Is there a patent on the Kelly rail and wire fence, and when was it patented? As they are having a contention about the Kelly and Dorrel fences I would like to know which is right is best to buy.

AN OLD SUBSCRIBER.

We believe there is a patent on the Kelly rail and wire fence. But there are also patents on the Russell and Shedd fences, put together in much the same manner. Either of these patents may prove worthless when tested in court. It is therefore hazardous to invest in either until their status is established in the courts. They each claim to have the best right to build this style of fence, or sell the right to do so. Our opinion as to which is best to buy is worth nothing. If the owners of either patent will give you good security that they will protect you against all suits for royalty from the others, that is the best to buy. But we would want the security in such shape that it could be relied upon as ample protection in case of trouble. These fences have been fighting each other for some years. When enough farmers have invested to make it profitable, we presume they will go into court, and one patent will be held good. The owner of it will then be in shape to collect royalty from those parties who have purchased rights from the other patentees. We look for a big fight before the matter is settled, and believe that the best way for farmers to do is to refuse to purchase either until the courts have decided which is the rightful owner of the patent. They will all keep selling as long as a customer is to be had, or a dollar to be made. Tell them to fight it out and you will buy from the winner.

SALE OF THE MOORE HERD OF SHORTHORNS.

The sale of the Shorthorn herd of the late James Moore, of Milford, was held on the Fair grounds on the 10th inst. Considering the stormy weather there was a good attendance. C. M. Thornton, of Northville, did the selling, and Mrs. Moore expressed her approval of the manner in which he conducted the sale. The purchasers were as follows:

FEMALES.
6th Duchess of Gloster, Mrs. James Moore, Milford.
1st Duchess of Gloster, Mrs. James Moore, Milford.
2d Duchess of Gloster, Everitt Moore, Milford.
Ophelia Aldrie, E. Moore, Milford.
Ophelia Aldrie 2d, E. Moore, Milford.
Gertrude, E. Moore, Milford.
Mary Gloster, E. Moore, Milford.
Red Mary, E. Moore, Milford.
Bell, Duchess of Milford, L. F. Allen, Lake View.
4th Bell Duchess, Walter West, Attica.
5th Bell Duchess, A. D. De Garmo, Highland.
13th Bell Duchess, Mr. Warner, Ypsilanti.<

The Horse.

For the Michigan Farmer.
BREEDING COACHERS.

Breeding a high class of carriage and coach horses has for many years been a leading branch of Michigan's agricultural industry, and her breeders have won an enviable reputation in the business. The soil, grasses and climate seem to be well suited to raising this class, and our leading farmers' tastes seem to tend in that direction.

That there is more net profit for ordinary farmers in raising first class carriage and coach horses than trotters does not admit of a negative argument. While a few particularly adapted to the raising of trotters succeed, the masses fail, for the reason that the principal expense of breeding and developing a trotter begins at an age when the carriage horse and coacher is ready for the market at a fancy price. A first-class coach horse is also a first-class farm horse, and with the good judgment and skill of a majority of Michigan farmers, one may be grown, broken and fitted for market without a dollar's outlay for a professional, or neglecting regular work, but can all be done while performing the every day work on a well regulated farm.

The first thing to be considered after suitable size and form for a first-class horse of this class, is perfect training for a family or gentleman's purposes, and for this nothing can be better than the ordinary winter driving on the road and light field work in the spring, which a three or four year old colt is fully able to do if handled with care. Then with a summer's rest he will be in shape for harder work the following winter and spring and so perfectly fitted for a first-class coacher or gentleman's driver while earning his living from the time he is three years old; and while it is safe to say that not one per cent of the horses bred and raised for trotting pay the cost of raising, fully ninety per cent of those bred for carriage and coach purposes may be made to afford a paying profit; if good judgment is used, and this needs to be commensurate with the selection of the sire.

Look the ground well over and choose the one best fitted in form and breeding to produce the kind of horse you want from such mares as you have at command. If you have not the right sort of mares already, embrace the first opportunity and have a "swap" with some fellow that does not know enough to keep a good mare when he has one, and there are lots of them in every State in the Union.

A size of coach horses should not be less than 16½ hands high, nor weigh less than 1,300 lbs. While he should be somewhat rangy, he should never be loosely put together. Head not too small, should be clean and bony; eyes full and clear; ears, a little long, should be small and sharp; neck, arched and fine at throat and so put on as to be carried naturally high; shoulders sloping—not thick and heavy; back short; loin strong and very little reached when in thin flesh. This will give beautiful long quarters and hips when in condition. Tail set well up but not high enough to look "peaked" when the animal is thin; legs should, as in every horse, be strong, the bone wide and flat and sinews prominent; the best of feet in shape and texture are indispensable in a road horse of any kind, and particularly in a coacher, for they have to withstand concussion as well as support heavy weight.

Where shall we look for this style of a horse? Most certainly choose an individual who has proved himself a uniform breeder, or else select from a breed noted for its uniformity in the qualities desired, tracing back through a long lineage, and which is noted for its propensity.

There are a few of our American trotters that have given good satisfaction as breeding this class of horses, but it is to be regretted that they are comparatively few. The complaint is often made by farmers who have only one or two brood mares that they cannot get two colts alike from the same mare and stallion. The reason for this is found in that although both may have a good pedigree and be fine individuals, there being no uniformity in their ancestors, there are no fixed characteristics to be transmitted and any one of their many ancestors' peculiarities in form and color are liable to crop out at any birth.

The average thoroughbred is too small for producing coachers from a large majority of our native mares, else they would be very desirable. The time will no doubt come when the size of our mares will allow of it, but it will require several generations of crossing with larger stock first.

The Cleveland Bay has had a great reputation all over Europe for many years, as being the best type and strongest blooded coach horse known, and so has been in great request among Russians, Germans, the French and in fact, all Europeans, and has even gone to Australia and India and been used with great success.

For fourteen years they have been much talked about in the United States and have been imported in considerable numbers; and the fact that those numbers are increased each year would naturally indicate that somebody has tried them with success, and upon careful inquiry it is found to be the case, and those who have tried them longest are loudest in their praise.

Dealers who buy largely for high class trade in eastern cities, find that half-blood Cleveland Bays sell quick at high figures and that they give excellent satisfaction among those who use them. One New York State buyer who does a large business with New York City gentlemen confines himself almost wholly to Cleveland Bays. He has sought out several imported stallions and makes a practice of going frequently to the localities where they make their stands and buying all he can find that are near a marketable age. He takes them east and after fitting them for a while finds ready sale for them at fancy prices, ranging all the way from \$300 to nearly \$2,000 per pair. Several late sales are reported at from \$1,200 to \$400 to \$700 each. Half-blood Cleveland Bays have twice won the first prize for coachers at the great New York City Horse Show, and one of them—a gelding—after winning the \$1,000 prize was sold to go to England for \$1,800. This horse was raised in Ohio, not far from Cleveland.

Cleveland Bays were originated and have been bred for coaching purposes, and their history traces back more than one hundred years. Their size, form and color are eminently suited for producing the finest class of coach horses for America, and those who have tested them in this country say that for crossing on our small native mares and on such as have been somewhat improved by trotting sires, nothing has yet been found that can approach them for uniform breeding. Bays with black legs and full tail and mane are always attractive, fashionable and saleable, and like the Devon and Holstein, the Cleveland Bay will transmit their form and color with almost absolute certainty. Of colored colts are the exceptions, and rare at that.

Information Wanted.

To the Editor of the Michigan Farmer.

Would like to know if it is the experience of all horse raisers that a colt, perfectly formed, but unable to stand (say for the first twelve hours after birth), must die. Is there any course of treatment or nursing that has ever succeeded in giving them strength? Will horse breeders please reply through the columns of this paper.

H. C. P.
NORTH MARQUETTE ISLAND, Jan. 12, '89.

The Horse Breeding Industry.

Prof. Greenleaf, V. S. of the Ontario Agricultural College, gave an address before a farmers' institute at East York, on the above topic. The lecturer first referred to the course to be pursued in reference to the bringing up of horses that are intended for market purposes. He thought for such a young country they had made satisfactory progress in the production of draught horses. One defect, however, existed to a certain extent in the course pursued in the production of these horses. There had been a sort of "boom" in heavy horses during the last ten or twelve years, and we find the call for purchases less than formerly. In other words, these horses declined in value. More attention should be given to selection in breeding these animals, as it is necessary to raise the standard as high as possible. One great harm which had resulted from the boom in draught horses was the fact that it had led people into the error of making improper selections, that is, mating unsuitable mares—animals too light, etc.—with heavy stallions. The country was very much favored in having men to risk their time and money in getting out high-class stallions. In the speaker's opinion heavy draught horses would continue to pay, but they would have to keep improving the standard as the demand wanes. The speaker then entered into a discussion on the Clyde, Percheron, and Suffolk, and also pointed out that horses without long hair on their legs were less susceptible to skin irritation of the legs than horses with a heavy covering. In speaking of light horses the speaker showed the difficulty was that they were of a very low standard, and what was wanted was an attempt to improve these horses. In short, a better class was wanted. The chief defect that existed was the deficiency in quality. How was this difficulty to be overcome? By getting a larger infusion of thoroughbred blood into the country. There was no money in breeding from or for speed. It was a mere speculation. What the farmer should breed was general utility horses, and in order to get these animals it was necessary to use good thoroughbred stallions. It was highly desirable to breed good-sized horses, as the large animal was always more likely to bring a good price and be useful for farmers' work, even if he happened to be unmarketable, than the smaller animal. The different breeds of mares that were available in this country could be crossed with thoroughbred stallions, which could be obtained from \$500 to \$1,000, and thus a good standard would be brought into existence. There was also a demand for saddle horses. In fact, the development for this class of animal was becoming greater every year, and he thought the raising of them should be seriously considered, as the price paid was nearly always high. Farmers should not forget the demand for horses in the British army. It was a matter of the country supplying 2,000 horses a year, but instead of this number a paltry hundred or so were only obtained as a rule. This was greatly to be regretted. The defect could be remedied by crossing mares with thoroughbred stallions, as pointed out. He had no hesitation in saying that a half bred horse was the best for general purposes, as he possessed activity, intelligence, and kindness, and did his work satisfactorily. In regard to carriage horses it was a disgrace for us not to raise a good class of these animals, as the demand was becoming greater every day, and good prices could always be obtained for them.

Horse Gossip.

The trotting mare Josie S., 2:22½, by Landmark 3505, has been sold to go to Germany. Price, \$3,000.

THOMAS KELLY, of Shelby, this State, has purchased from A. B. Donelson, of Pontiac, the chestnut stallion Golden 8979, two years old, by Agile 2251, dam Belle Gray, by Golden 2438.

It is reported that S. A. Brown & Co., of Kalamazoo, have been offered \$30,000 for the stallion Ambassador 1498, by a syndicate of Southern breeders. The story is rather thin—more so we suspect than the Bell Boy sale.

MR. LESTER WARNER, of Broadus, this State, has sold to Douglass Brothers, of Vicksburg, the five-year-old trotting stallion Mark Anthony, sired by Frank Noble, a son of Louis Napoleon, dam by Manhattan Logan. Mr. Warner thinks this fellow will be heard from if handled right.

NINA D., a mare bred the name as Nuttingham, owned by Mr. Willett, of Pontiac, this State, is to be bred to Sable Wilkes, 2:18. Her sire is Nutwood, 2:18½; dam Adelaide, 2:19½, by Phil Sheridan. There will be plenty of speed in the produce of such breeding.

MR. ROBERT BOWSER has sold to W. B. Allen the mare Miss Majolica, for \$15,000. She was four years old in May, sired by Starlet, the stallion which died a few weeks ago, dam Jessie Kirk, by Clark Chief. As a four-year-old full sister, Majolica, trotted a mile in 2:22½, after a very short preparation. Miss Majolica will be trained and given a record the coming season, and then be used as a brood mare.

There is nothing better for the legs of horses than plenty of hand-rubbing. To the

horse stiffened by hard driving, or lack of exercise, hand friction affords a great relief. It starts the circulation, renders the muscles supple and elastic, and is a great preventive against many diseases to which horses are liable. The lack of this friction has caused many a horse to become stiffened and useless which would have done good service for years if properly cared for. A lazy groom is a very expensive one, no matter how low the wages he is paid.

The Black Hills country is making a name for itself as an excellent horse-growing country. It already boasts many the horses of the best breeds known to the world. All of these seem to adapt themselves readily to the climate, while the young grow up vigorous and strong, with all the best characteristics of their kind strongly marked. Such a thing as disease among horses here is almost unknown. Numerous ranches there are in the valleys surrounding the Hills devoted especially to the propagation of the best breeds, and ten years from the present time will find the Black Hills as famous for its horses as the blue-grass regions.—Rapid City (D. T.) Journal.

GEORGE E. BROWN & Co., of Aurora, Ill., write under date of January 12th: "The unusually mild winter has had a very beneficial effect upon our horses, which is shown by their steady growth. Those of our own breeding, as well as those imported, have as yet had no check in their growth since last spring. Those imported this year landed in fine condition, and the summer and fall not being as hot as usual, they were soon over the effects of the change, and the abundance of grass and other green food started their growth which has continued uninterrupted, and we are fully satisfied that all that is needed in this country to grow as good horses as can be grown in England is good comfortable quarters, where an even temperature can be kept up, and plenty of green and soft food not heating to the blood. On weighing up a lot of our two-year-old Shires a few days since we found they tipped the beam at from 1,575 to nearly 1,700 pounds; and it is not flabby fat, but good hard muscle and flesh covering great strong frames, closely coupled and tied together with sinew. We find that the Shire is becoming more popular every year in the oldest draft centres. The great call is for more bone, and the Shires have it to perfection. Nearly every letter from our last year's patrons speak of this. We also find that our stallions imported as yearlings and grown here, are proving very successful as breeders, being fully acclimated. Our last two importations of Cleveland Bays are more than pleasing us. In order to secure the very best and purest blood, we have arranged the last few years for having them brought off the mares for us at weaning time, and as a result those we now have ready for service are very uniform in size, color and build. Those coming three years old will range from 1,325 to 1,400 pounds in weight, and yet are elegant in form, and have a grand easy action. We are better prepared than ever before for the increased demand of this season. Our orders are continually coming in from new quarters—our last was from Aroostook County, Maine. We have sold twice the number of horses to eastern States this year that we have ever done before."

The Farm.

CONCERNING RUST.

BY PROF. J. HAYES PATTON, M. A., GUELPH AGRICULTURAL COLLEGE.

Rust (*Puccinia graminis*) is the product of a minute plant belonging to a very extensive group, called the Fungi. Many of these are microscopic and live upon other plants, feeding upon the juice of the latter to such an extent as to affect their vitality. In this comprehensive group we find plants producing rust, smut, mildew, ergot, blight, potato rot, and countless other diseases, that affect the higher forms of plant life. In the case of the so-called rust, we find that a spore, which serves the purpose of a seed in higher plants, reaches the leaves or stalk of the plant attacked. If conditions are favorable it germinates and soon finds its way into the plant affected, and gives rise to a mass of thread-like structures (mycelium) which permeate the host plant and feed upon its juices. Not long after this vegetative condition has been attained, spores are produced in myriads on the threads of which it is composed. So numerous do they become, that they burst the thin covering of the leaf or stalk and show a rust-colored rupture. If the powdery-like substance thus exposed be examined under a microscope, say 200 diameters, it will reveal that what appears to be dust is really a mass of regularly formed seed-like bodies, consisting of one cell, oval in shape and reddish in color. Now these spores (uredo), finding their way to wheat plants, soon germinate, and again myriads of spores are produced, so that in a very short time, if conditions are favorable—damp, close, sultry weather—a whole field will be affected. The rapidity of growth in these lower forms of plant life is almost incredible, but the facts are too flagrant to doubt it. The rust plant does not stop here. A little later in the season, on the same thread-like structure (mycelium), another form of spore is produced; but these are usually more common on the lower part of the stalk, and are destined to carry the trouble into another season. The former are frequently spoken of as "summer spores," the latter as "winter spores." These last formed spores (teliospores) are two-celled, pear-shaped and black. Affected plants are then said to be attacked with "mildew" and suffer severely from the effects of this parasite, just at a time when the plant has reached a stage to mature its seed. These black spores proceed no further that season, and will not again give rise to mildew on wheat until another plant has served as nurse for a while. In spring the dark spores germinate and give rise to another form of simple spores (sporidia) formed at the ends of threads growing from each cell of the black spores. These (sporidia) as yet have not been discovered to germinate upon wheat; but when they reach the leaves of the Barberry shrub they germinate, enter the leaf and soon give rise on the underside to masses of cup-like structures, in which are produced innumerable round golden colored spores (aecidium), which will produce a vegetative growth only when they germinate on the wheat or some other closely allied plant. They then give rise to the condition referred to as

"rust." Such is the life history of this common foe, and to the reader must appear a very complicated one indeed; there being no less than four kinds of spores produced—uredo, teliospore, sporidia and aecidium. These, for convenience, we might name summer, winter and spring spores; spring referring to the last two. Two grow on the wheat plant (uredo and teliospore), one in spring on stubble or fragments of straw (sporidia), and one on the leaves of the Barberry (aecidium).

THE BARBERRY AS A HOST.

The question naturally arises here, Is the Barberry shrub to be blamed for all the rust? In order to defend this shrub against such a charge, several views have been set forth, which are as follows:

1. Uredo spores may be carried over the winter upon plants that do not perish like wheat at the close of the season, e. g., couch grass, etc.

2. Sporidia may germinate on wheat without the intervention of another plant.

3. Sporidia may develop on other plants than the Barberry.

But as yet these are merely guesses at the truth. That such a common enemy has so long eluded the investigation of scientists may seem remarkable; but when it is remembered how many conditions are required to be observed in searching such a minute foe, the surprise is not so great. However, it does seem that a sufficient cause has been made out to prevent the further use of this shrub as a hedge plant in the neighborhood of wheat fields. The extreme minuteness of the aecidium spores enables them to be carried long distances in the air, so that it is not necessary that the source of trouble should be close at hand. We may reasonably hope that other sources than the Barberry will be found; but in the meantime farmers are acting in harmony with the teachings of science in continuing no longer the use of this plant for a hedge.

CONCLUSIONS.

From extensive inquiries into the presence and cause of rust, the following conclusions have been reached:

1. Seasons are the chief cause of rust; sudden changes of temperature and rain, accompanied with close still weather, are favorable to its increase.
2. Low-lying rich soils are most subject to attack.
3. An excessive use of manures, rich in nitrogen, encourages the disease.
4. Late sown grain is most subject to attack.
5. Thinly sown crops seem most liable to injury.
6. Red wheats are less affected than white varieties.
7. Rust is more common in the vicinity of Barberry hedges than at a distance.

To lessen the attacks of this troublesome parasite, farmers should avoid, as far as possible, the conditions referred to above, which seem favorable to its propagation. By so doing, they are following in the line of practical and theoretical teaching, and may expect favorable results.

Plans for Silos.

The Wisconsin dairyman, Mr. Hiram Smith, has recently built a silo upon a different plan from what has been followed heretofore, which is described by Mr. L. H. Adams, of the Wisconsin Experimental Station, as follows:

Reaching Mr. Hiram Smith's farm about three p. m. we found all hands busy harvesting the corn crop, under the supervision of Mr. Smith himself, who is constantly on the lookout for an opportunity to lighten the load of handling the corn from the time it is cut until it is landed in the silo. It is this close application to his work that makes him an authority on farm topics, and original in his ideas.

Not having room in his three old silos for the increased acreage of fodder corn, Mr. Smith was obliged to build larger, and in doing so he has ignored all precedents heretofore established. The building is thirty-two feet long, twenty-two feet wide and sixteen feet deep, its capacity being 160 tons. It rests on a stone foundation one foot thick, upon which two twelve-inch planks, spiked together, are bedded for sills, the sills being allowed to lap over each other at the corners in order to securely tie the building at the bottom. For studding, 12½ inch planks were set every thirty-two inches. Mr. Smith says that he prefers to use a heavy studding, and not place them so thick. The expense is no greater, and it makes a more rigid wall. Call lumber, costing \$9 per thousand, is first used on the outside of the studding; building paper is then tacked on, and covered with shingles laid six inches to the weather. The inside of studding is covered exactly the same as the outside—first, call lumber, second, paper, and third, shingles, that cost 65 cents per thousand, thus enabling Mr. Smith to cover 500 feet of surface with shingles for \$1,900, which would cost \$1,500 if lumber were used, and it is Mr. Smith's opinion that shingles make a better lining than lumber nailed on horizontally. However that may be, time will soon show up the weak and strong points of the new idea, and one more step in advance will have been made. We can not all of us buy lumber and shingles at Mr. Smith's prices, so that in some localities, there might not be any pecuniary advantage in using shingles for inside and outside lining; but if better results are obtained when shingles are used, it would pay to put these on.

Mr. Smith's new silo has two doors seven feet wide; placed one over the other, and reaching to within two feet of the top of the pit, that enables a cart to pass in and out. A long step in advance was taken when the expensive and worse than useless partition was declared null and void. The building is tied across the top with four poles spiked to the plate. Both inside and outside linings of shingles are painted.

The cutting was done with a machine driven by four horses on a sweep power. It required one team and three wagons conveniently equipped with four racks to haul the corn from the field. A force of seven men were kept busy, distributed as follows: One at the power, two about the machine, one in the silo, one drawing corn from the field, and two loading the empty wagon left in the field. Figuring Mr. Smith's hired help at what it cost him, and fifty cents a day for each horse, the cost of putting a ton of corn into the silo was fifty cents. The

cutting in the field was done with a self-rake reaper.

As there are sixty-five cows on the farm to milk, chores are commenced at 5 o'clock each day. The teamster then hitches on to the reaper, and in two hours will have cut them enough corn to keep them running for a day.

Prolific Dorset Horns.

At a recent sale in England of Dorset horned sheep, two lambs brought \$9.75 to \$12.25 each; wether lambs, \$8 to \$10; wethers \$11.50 to \$12.50. As an instance of the prolificness of breeding Dorset Horn ewes, there was one pen of ewes, the property of Mr. Tucker, St. Andrews farm, Lulworth, producing lambs in December, 1887, fattened their lambs, and were now sold with their second crop of lambs, October 25th, as couples at 6½ per couple, and were two months gone again in lamb. On Oct. 25th, 1887, a pen of Dorset Horn ewes was sold, which lambed in November, the greater part had twins, and their second crop of lambs were sold fat in Dorchester market in August last. One ewe in particular lambed on the 26th October, 1887, twins, which was sold fat at 3½ each; she afterwards produced a second crop of three lambs, which were sold in August, 1888, in Dorchester market at 2½ each, the ewe then being worth 50s to the butcher, making a total of £29 6s 4d in ten months.

Agricultural Items.

T. S. GOULD, of Connecticut, has been testing the weights of new and old corn, and reports the shrinkage just one-eighth.

WESTERN NEW YORK farmers are said to prefer a clover seed as a preparation for potatoes. Select seed in the fall when the potatoes are dug and keep it in a cool place; a temperature of forty degrees is desirable. If seed sprouts before planting its vitality is impaired.

A VIRGINIA farmer always mows his oats for hay when the grain is first formed, and thus finds the crop is of the utmost importance to him. It does not matter that oats are an exhaustive crop, since everything grown is fed on the farm and thus returned to the soil.

The difference between a worn-out farm and one well kept up in fertility, is much like the difference between a bank-book that nearly balances and another that has a large cash credit in its favor. The size of the bank-book does not indicate its value; neither does the number of acres in the farm.

The editor of the Mark Lane Express advises farmers to cut off potato blossoms as soon as they appear. The tubers, or true seed of the potato, which result from the blossoms, are not only unnecessary to the formation of the tuber below, but are a prejudicial strain on the plant. He says: "I have tried it again and again on a large scale—three rows left and three rows cut—and the results have more than satisfied me."

A NEW YORK farmer feeds a quarter of a bushel of unmarketable potatoes to his cows every day, giving each cow her mess in the manger. The potatoes produce no deleterious effects on the milk, which is accepted by a near-by cheese factory. Heavier feeding might perhaps, he thinks, give more unfavorable results. Some retail milk-dealers consider potatoes worth fifteen cents per bushel when fed for milk. Another farmer feeds five or six quarts of cut apples, mixed with bran, daily, and finds they increase the milk flow. He began by feeding a smaller quantity.

An effort is to be made at the Exposition at Paris next year, to popularize corn as an article of food among the Europeans. A kitchen will be established, where all known preparations of corn will be cooked in American ovens, after American recipes, and distributed gratis. A lecturer will present the merits of corn and the modes of preparing it, every hour. The cost of this "missionary work" will be about \$30,000; but it is believed that if the value of corn as a food were better known by the poorer classes of foreigners, the demand would be greatly increased, the exports from America very greatly augmented and prices bettered.

As Ohio farmers is in doubt whether commercial fertilizers are good for corn or not. He advocates the use of them for most crops. Says the fodder is more stocky and ripens from ten days to two weeks earlier where fertilizers are used, which is the principal advantage for corn. The fertilized corn will keep ahead all summer till it begins to ripen and stops growing; then the corn not fertilized, not being so far advanced, will be green and keep growing, and by the time it is ripe it will be as tall, if not taller, but not so large otherwise and not have as many leaves. If corn is planted late he would advise using fertilizers; if early, he would not, unless the land is very poor.

INOCULATION as a preventive of disease does not seem to work in all cases. Dr. Billings, of the Nebraska Experiment Station, who is one of the converts to the theory, obtained permission to inoculate four healthy herds of swine belonging to farmers in the vicinity, who supposed their swine would be secure from the disease in a dangerous form. The aggregate number was about three hundred, and the virus proved so strong that nearly all the hogs died, but not until they had communicated the disease to many others, and at last accounts hog cholera was running like a prairie fire, there having been no precautions taken to quarantine the animals in case of a fatal development of the disease.

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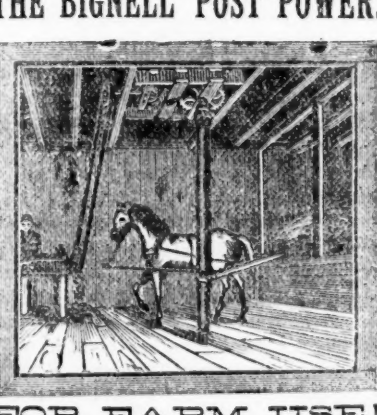
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Horticultural.

THE CULTIVATION OF THE CRANBERRY.

The first meeting of the New England Farmers' Club for 1889 was devoted to the consideration of the cranberry, its culture and commercial value. The Cape Cod region being extensively devoted to the growth of this fruit, it is a matter of interest to Massachusetts horticulturists. Mr. J. W. Stockwell, of Sutton, read one of the most exhaustive papers on the subject which has yet appeared, and from the report of our esteemed contemporary, the *Massachusetts Ploughman*, we take the following extracts:

The cranberry is so named, says White, from the appearance of its bud. Just before expanding into the perfect flower, the stem, only and petals resemble the neck, head and bill of the crane; hence the name "cranberry" or cranberry. I have never noticed this resemblance, but had supposed it took its name from being found on the borders of ponds and in wet meadows, or marshes, where the cranes or herons "most do congregate." Is this as it may, its bud and blossom are beautiful and resemble in their general appearance the bud and blossom of the Partridge-berry, or of the green-house plant the Bouvardia, not quite so large as the latter and much larger than the former, but of similar form and of a delicate pink color.

The cranberry is a native of North America and is found from Virginia to Minnesota. It is a vine, sometimes in favorable locations running ten feet or more, sending out branches, and these branches often smaller ones; so that when broken near its root and carefully drawn out, you have a long vine, interwoven with others sufficient to cover a large plot of ground. These branches send down from the joints numerous little roots to help sustain the plant and to grow the fruit, but not in such numbers as would seem useful to support so much life and perfect the berry. And this peculiarity is explained by the analysis of the fruit, which is found to contain less than two-tenths of one per cent of inorganic matter as derived from the soil, all the rest being derived from the air and from water.

The color of the mature fruit varies with soil, mode of culture, location, and variety of berry, from the light red of our inland bogs, to the "Black-cap" of the Cape. The dark color has been thought to indicate thorough ripeness, a mistake that has often had an undue influence in the market in favor of the poorer table berry, and discouraging to the planting of inland bogs, because the difference of \$1.00 to \$1.50 per barrel is often the difference between profit and loss.

Were this dark berry really the better fruit it would be well; but when, instead, the lighter is the finer flavored, the richer, the more juicy and of a brighter color when on the table, then it would seem that inland cultivated berries should be preferred by good housekeepers. The difference between the dark berry of the Cape, and the lighter colored, inland berry of the improved bog, I will illustrate by the comparison familiar to us farmers between the two varieties of apple—the Roxbury Russet and Rhode Island Greening—the one drier and a thicker skin, can be handled more roughly and is the better keeper; the other, with a thinner skin, more juicy and tender, easily injured and decays sooner if injured.

It has been said the cranberry plant, if put in very strong land, will run to vines and produce little or no fruit. This I am convinced is a mistake, if the bog is properly leveled and sufficiently sanded. Instead, the richer and deeper the soil beneath the larger will be the crops and the more continuous, and the finer the flavor of the fruit.

The first requisite for a successful cranberry bog in the middle or the western part of the State is water—a good and sure supply for every emergency; in the spring for safety from frosts, in the summer for use against insect pests, in the fall for security against frosts, and in the winter for covering the vines. Therefore an unfailing reservoir, or reservoir rights, or water rights, (if on a mill stream) are absolutely essential to success, or to satisfactory results. Having the water supply secured, next look for sand of good quality, that is, rather coarse than fine, and free as possible from loam or any other impurities, near at hand and easily accessible to the bogs you propose to plant.

These two conditions being assured, you are ready to begin to work by perfecting a system of drainage, cutting the large main drains with sufficient incline to insure a quick flow when desired; into the main drains the cross drains should be cut at short intervals, to carry off the water after rains, and to give the full effect of the sun's rays upon the growing fruit to hasten its maturity. Having the drains completed you are ready for work upon the bog preparing it for its coat of sand. This is frequently done by leveling the inequalities only, and this may be sufficient and best on some Cape bogs. But on a meadow with a subsoil of rich mud or peat, six, eight, ten, or more feet in depth, and with the tendency for life which some of our meadow grasses have, I think any bog will be more satisfactory in after years if it be smoothly turned over with a flat furrow steel plow, drawn by a strong, steady team, able to cut through any hawsacks or roots, without flinching or overwork. The cutter of the plow should be drawing, or circular and rotary, of the best steel and sharp as possible. These directions are for a grass meadow. Any other must be treated as the circumstances demand, so it is leveled, or better, slightly inclined from the centre of each section toward the ditches.

You are now ready for the sand to be laid on, to the depth of five or six inches,—six the better. It is supposed this is on the border of your meadow, and if so, a portable tramway should be laid to the extreme part of the bog that you may work back toward the source of supply. Circumstances must govern you in the method of hauling the sand to its place. On some meadows the incline is sufficient to require no draft to carry it—only men or a horse to take back the cars. On other bogs power must be used both ways. Generally the use of four cars will keep a good working force employed at the bank, by the quick exchange of the two by horse power. This part of the work

can be done in the summer, fall, or winter, (the sand being dumped in heaps, and spread in the spring if frozen), or in the early spring, but this season should be, if possible, reserved for setting the vines, which work should always be done in the spring, and for the best results, certainly not later than the first of June.

The vines should be fresh and thrifty—not allowed to wilt or shrivel, but kept moist, or in water, till placed in the hill. They should be prepared by hand-sorting, their roots are clean from any and every other root or grass, and when cleaned, straightened out into ropes, and these cut into lengths of about nine inches, (if the sand is six inches deep), and bound in blocks or bundles of convenient size, (somewhat as kind dried kindling is tied up), for the boy who shall accompany the planter. After being thoroughly soaked in water till they take on a bright, fresh look, they are ready for use.

Now the planter takes a small handful, —perhaps from a dozen to a score of the cut vines, and grasping the top end firmly in one hand places the square end of the dibble on the vines about two inches from the end and carries them down into the hole, being careful to leave the vines perfectly straight down in the ground, the tops being two inches above the level sand. These will quickly send out shoots and runners. On our inland meadows,—and it is for these I am giving these details,—the hills should not be less than eighteen inches apart each way to assure the best results.

Thorough, careful culture, removing every root of weed or grass, is absolutely essential during the first and second years of growth, while the third year should give a fair crop of first class berries.

The setting of the vines I shall propose to do by the method called hill-planting,—the only one I shall describe this morning, though there are other methods that may in some cases be better.

The tools (all home-made) for the planting of the vines are first a "marker," made of light material to be easily drawn by a man, marking or indicating more or fewer rows as you please; next a spud; to make this take a round stick or piece of wood pointed at the lower end, about ten inches from the rather blunt point, bore a hole in this stick and drive in firmly a piece of strong wood projecting on one side about three inches, upon which to place the foot to drive it into the ground, making the hole for the planting; last, a dibble, or small wooden trowel, for setting the vines. These simple implements are sufficient for ordinary work, the marker leading and making straight rows, followed by the spud driven into the ground at each intersection, and carefully withdrawn that the hole will not fill; again followed by a boy to carry and select and have ready the vines for the trusty and careful man to set them in the holes and press the sand firmly around them, which completes the work. I say a trusty and careful man to follow and set out the vines, because it is of great importance that the vines should be set true and with their lower ends below the sand.

The first danger is variation of temperature. The bog is a constant anxiety from the day the water is drawn off (May 10th to 15th) till the last berry is picked. The water being drawn off, if conditions are favorable, May 15th, the danger from the frosts is not safely passed until June 10th, and the susceptible tender shoots containing the blossom buds must be carefully guarded, or the loss of the crop will be inevitable thus early in the season, for these form in the fall, and appear with the first signs of life in the spring. Then the frosts in the fall must be carefully guarded against. I do not think it safe for the owner of an inland bog to be off duty after August 15th, though it is the very best time for the owner to be on duty before the 25th of August. The past season the frost of September 6th was so severe as to affect the Cape and Jersey even, and proves the need of a full supply of water, and that the cranberry grower must be constantly on the watch to save the crop. The berries are very susceptible to frost, growing more hardy as the fruit matures.

The unfailing remedy for insect enemies is water, best applied when wind and current will unite to waft all insects safely over the bog. I have not found a decoction of tobacco sprinkled over the vines a remedy for the fire-worm, but should it prove so, it would be invaluable.

The Farmers' Garden.

Mr. J. M. Smith, of Green Bay, Wis., who cultivates a garden of forty acres extent, from which he makes a net profit of several thousand dollars annually, believes a half-acre of ground on the farm devoted to garden products will yield more net profit and more comfort than any other acre of similar size. He would have the garden long and narrow, and would plant the rows the long way. The work should be done almost exclusively by horse power. He would not attempt testing new varieties much, as these almost invariably prove disappointing.

Mr. Smith thinks it cheaper on the whole to take but a single crop from the strawberry bog. This necessitates setting out a new bed each spring. The Manchester and Crescent, with the Wilson for furish pollen, have proved most satisfactory.

Of red raspberries he recommends the Marlboro for first early and the Cuthbert for the main crop. Of black, Souhegan for early and Gregg for late. He plants currants six feet apart each way, and finds Long Bunch, Holland and Prince Albert best. Stone's Hardy and Ancient Briton are the most satisfactory blackberries. Among grapes, Moore's Early, Worden, Concord and Delaware are most reliable for his locality.

For peas, the old Dan O'Rourke and the American Wonder are best for family use. The Short Top Strap Leaf and French Breakfast radishes prove very satisfactory. He uses onion sets for early onions and Yellow Danvers is best for the main crop. The Early Egyptian beet is best for the first crop and the Blood turnip for main crop and for winter use. The Early Purple Strap Leaf turnip is most satisfactory. Of lettuce, the Boston Market is best for growing in the hot-bed and the Early Simon for the open ground. Among potatoes, the Early Ohio has proved most satisfactory for the early crop and the Beauty of Hebron for later. Of the sweet corn, the Cory has proved earliest, but is poor in quality. It

should be followed by Early Minnesota, and Crosby and Evergreen. Of tomatoes, he has been best pleased with Acme and Trophy. Of muskmelons, Early White Japan and Hacksack are early and of excellent quality, and the Mountain Sweet watermelon is most satisfactory. Of squashes he recommends the Scallop Bush for summer, Boston Market for autumn and Hubbard for winter. The Ball Noe pepper and Golden Wax bush bean are best of their class, and the American Purple Top rutabaga is most satisfactory. The Early Wakefield is the best early cabbage. It should be followed by Early Flat Dutch and Premium Flat Dutch. The latter should be set about the middle of June. The Snowball cauliflower is most reliable for heading. The cauliflower should be set either quite early or toward the first of July, as it will not head well during mid-summer.

Among the rhubarbs the Linnaeus is best in quality, and of asparagus he prefers Copner's Colossal. The Golden Dwarf celery proves most satisfactory. The White Pimento is very attractive in appearance and is easy to grow, but is very inferior in quality. Mr. Smith considers trenching unnecessary for the asparagus bed. He prepares a rich piece of ground by thorough plowing and harrowing, and plows furrows across it four feet apart, in which he sets the plants about twelve inches apart. The plants may be one, two, but should not be more than three years old. He prefers to leave the tops until spring, as these retain the snow during the winter and the soil does not freeze so deep. Every spring fork in a liberal coat of manure. A little asparagus may be cut the second year. The shoots should always be cut clean, so long as the cutting is continued.

The Origin of Forest-Groupings.

It has been rather by slow steps, and by the aid of first partial introductions, that the flora of all the epochs has been transformed. Instead of leaps we meet with modifications aided by time, which were worked out through a long duration before becoming definitive. It is enough, therefore, to examine attentively the vegetable impressions collected over many successive levels and at points distributed along the course formerly followed by the vegetation, and making its advance, to recover the partial terms of the presumed filiation of the types whose origin we are investigating.

One phenomenon has been remarked in intimate relation with this gradual and successive displacement of plants; it is the cooling of the globe, operating insensibly, but subject to a general movement, the progress of which, although extremely slow, has never been arrested. Plants have pursued their migrations under the rule of this phenomenon, moving toward the south and gradually abandoning the north, beginning with the extreme north, or the immediate environs of the pole. The discovery of numerous vegetable fossils at different points in the Arctic regions, in Spitzbergen, Greenland, Grinnell Land, etc., has been sufficient to give rise to terms of comparison and demonstrate what was the character of fossil vegetation when that of Europe more or less resembled the present vegetation of countries near the tropics. Hence it has been possible to establish with fair probability not only the general march but also the filiation of a number of plants; and it has been ascertained that the direct ancestors of part of our trees originally inhabited the interior of the polar circle, while many others, confined now to southern countries, once had European predecessors.—*Popular Science Monthly*.

The Fifty Million Dollar Soldering Iron.

Recent telegraphic dispatches have stated that Lewis McMurray, and others, had obtained a verdict in the United States Circuit Court against George R. Emerson, proprietor of a fruit canning establishment at Somerville, Mass., for using a patent soldering iron without the permission of the owner of the patent. It was further stated that "Counsel for the defendant said if the plaintiffs should proceed against all who have infringed the patent they could probably collect \$50,000,000. Suits are to be instituted against all manufacturers who have violated the rights of the plaintiffs."

Mr. C. M. Fenton, Secretary of the Erie Preserving Company, of Buffalo, has been asked if this decision affected his company. He replied that he supposed that they had at one time used this iron, which was probably that known as the Tillery patent, but that they had discarded it some time ago for a German-silver steel solderer, with which 5,000 cans could be made in a day, against 3,000 with the Tillery, and were now getting ready to use a machine made in Chicago, which was almost human in its operations, the unsoldered can going into it on a train, and coming out finished.

He did not imagine, though, he said, that the big companies would accede to such a decision without appealing it, unless they could compromise with the patentee at reasonable rates. Emerson was a small manufacturer, as the small verdict, \$93, showed, and there would be further resistance. He did not see why some larger firm was not sued. The Erie Preserving Company, with which he is connected, is turning out 3,500,000 cans of preserves this year, and the award of \$1.87 per thousand would amount at this rate to \$6,545 per year so long as this iron was used.

In this connection it may be stated that a new company has lately been formed out of the Erie Preserving Company by way of division. The old company still exists, but the jelly-making interest, itself a large one, has been made separate to see which is the more profitable. The new company is to be called the Buffalo Preserve Company, with a capital stock of \$125,000.

The canning business is said not to be so profitable this year as last. "We have to contend with a curious sort of competition," said Secretary Fenton. "After a good year a large number of small concerns will spring up. They will not put money enough into the business to meet obligations when those who have furnished fruit cans, etc., begin to press. They have nothing but goods to meet the demands with and they throw their only assets on the market for what they can get. This breaks down prices, of course, but to counterbalance this feature of our business, there is much encouragement for the rapid growth of the foreign trade. Europe does not seem to know how to can fruit. We have just sent 1,000 cases

of apples in gallon cans to England and Scotland. The California fruits are in great demand, and the San Jose Packing Company has this year sent four carloads to the City of London."—*Popular Gardening*.

How FARMERS CAN GROW RASPBERRIES.—Philadelphia, Turner and Cuthbert are the best for our climate, and will grow on good potato ground. Plant four feet each way, and cover the ground so deep with straw or other mulch that no grass or weeds can grow, and there will be no trouble with suckers. Late in November with a load of straw drive aside the row, bending the canes all one way with the wagon axle, throw over them enough straw to hold them down and cover them. This gives protection from freezing and thawing and exhausting winds and leaves the vitality in the canes where it is needed to produce a good crop of fruit. The Turner will not kill down if left uncovered, but the cane becomes so exhausted that it will not produce much fruit. The increased yield, when protected, will pay the expense ten times over. Uncover early in the spring, stamp the straw well in around the roots, cut out the old dead canes, shorten the new ones to about three feet and tie to stakes or wires.—*C. L. Smith at a Minnesota Farmers' Institute*.

How to CHOOSE FRUIT TREES.—In selecting fruit trees for a home supply one may choose the best varieties irrespective of appearance or yield, for the popular and most salable fruits are not by any means always of the best quality, and productiveness is preferred before quality in market sorts. The same is true of small fruits, of which the finest are either too soft for shipping or not sufficiently productive. But for selling, one kind only will be preferable. In pears, the fruit of a certain orchard of 2,000 Duchesse has always sold at prices 50 per cent in advance of the market, because the fruit could be graded evenly in quality and packed separately. An orchard of Newtown Pippin apples has its crop engaged in advance for ten years on a regular contract, and another of Northern Spy is under contract in the same way. Had these orchards been made up of 20 or more different kinds the product would have had to be peddled about.—*New York Times*.

A CURIOUS STRAWBERRY GROWTH.—The so-called strawberry is not a berry at all, and except in a very loose sense, not even a fruit. In point of fact, the true fruits in the strawberry are the little dry pips commonly but erroneously called seeds, and which spring from and are more or less imbedded in the fleshy end of the flower stalk. On most plants the flower stalk or axis, after having given origin to the several parts of the flower, ceases to grow, and disappears from sight; but in the strawberry it swells out into that delicious succulent mass which is so nice that the partaker needs not for a moment the botanical pedant who tells him that it is not and could not be a berry. That it is really the dilated top of the flower stalk is, however, shown on various grounds which it is unnecessary to discuss. Suffice it to say it is the office of a stalk to produce leaves, leaf-buds, shoots or all of them, as the case may be; and in an illustration we have seen three or four such buds springing from the sides of a strawberry, and one of them so perfectly organized as to have not only leaves but adventitious roots, the commencement of a runner, and terminal flower.—*Gardener's Chronicle*.

Horticultural Items.

From a point 12 miles distant from Cleveland, O., the past season, 7,500 tons of grapes, or 1,875,000 baskets, were shipped.

Some of the red currants have the quality of hanging long without loss of quality, but rather improvement. Ruby Castle has this property. This makes it valuable for a late market.

Mr. J. N. STEARNS, of Kalamazoo, whose orchards are in the vicinity of South Haven, secures his markets in advance, carefully, and gets highly satisfactory returns from his fruit.

Mr. N. OMMER, of Ohio, says the man who plants too many white or green grapes is going to get left. The demand for red and black grapes is far in excess of that for white sorts.

Why continue to argue that it is cheaper to buy our fruit than raise it, when in our hearts we know that such a statement bared to the truth means that we shall practically go without it?

The greatest drawback to quince culture is the borer. It can be kept in check by washing the body of the tree with a soda made of whale-oil soap and carbolic acid. No tree is more benefited by liberal manuring and good culture than the quince.

Popular Gardening says an orchardist known to the editor, successfully diverts the attacks of mice from peach trees by strewing the ground here and there in the orchard with superfluous branches cut from the trees. This may be a new trick, but it is a trick that they can get that which is young and tender. In ten years this remedy has not failed him.

E. F. SMITH, connected with the botanical division of the Department of Agriculture, has made the subject of peach yellows a study, and thinks there is a disease resulting from starvation, which resembles in some symptoms the true yellows and may be cured by proper feeding. But for the true yellows, no applications of fertilizers, kaolin, potash, etc., have been found of use. No remedy is suggested for the true yellows, and its cause is still unknown.

A CORRESPONDENT of the *N. Y. Times* says he wrapped the trunks of his young orchard trees with newspapers to prevent them from being gnawed by mice, rabbits or sheep, tying the papers at top, bottom and middle, and found the simple precaution insured absolute safety. The bark under the paper was round, smooth and bright. The white paper does not absorb the heat as does the tarred paper, and hence the bark is not killed when a warm day is followed by a cold night.

A SMART fruit-buyer got ahead of N. Ommer, the well-known fruit-grower of Ohio, on a pear deal the past season. The buyer, connected with Mr. Ommer for his pears at \$2 per barrel, a little more than other dealers would pay. Ordinary pear barrels hold 2½ bushels, but this man had them made to hold

one peck more, and thus swindled Mr. Ommer out of 24 bushels. Mr. Ommer's immense crops are usually sold through two dealers, who distribute the stands among their correspondents.

W. R. LAZENBY, of the Ohio Experiment Station, says: "The mineral part or ash of trees is wholly derived from the soil and the growing of them exhausts the soil to the extent to which these are needed. Analysis shows that a large part of the ash is contained in the seeds. It is also true that a small apple contains about as much weight of seeds as a large one. The growing of a crop of small apples exhausts the soil three times as much as growing an equal bulk of apples three times as large. The same is true of berries and all fruits. The lesson is plain: We should grow larger fruit and fewer in number. Rich soil and severe pruning and thinning are the means to this end."

The Bee Moth.

John Martin, in the *Prairie Farmer*, describes the appearance and habits of this pest of the apiary:

The moths of this insect (*Galleria cereana*) are about three-fourths of an inch long, with wings that expand about one and one-fourth inches. The color is a dusky-gray, the fore-wings sprinkled with purple-brown. They harmonize so well in color with the old boards that they are very readily passed unobserved. Females are generally larger than males. The tongue is quite short, but the palpi, two of the mouth parts, are prolonged into a kind of snout, which is often mistaken for the tongue.

The female, by means of her telescopic ovipositor, easily places her small, white, globular eggs underneath or about the entrance to the hive. Soon the eggs hatch, producing dirty-looking larvae, ash-gray above and yellow-white beneath, and having brown heads. As soon as they hatch, the worms commence to spin silken tubes for their protection, enlarging the tubes as they increase in size. The worms feed on wax, cutting their way right through the comb, and destroying the young bees in their course. Their presence in the comb may be detected by the silken tubes straggling and branching over its surface, or better still, by the bottom board being covered with particles of the comb or bee bread mingled with the black powdery excrement of the worm. The larvae attain their full growth in about three or four weeks, having reached a length of about one inch, and ready to spin their tough white silken cocoons. The black excrement of the worm is mixed with the silk in the weaving. The cocoons are hidden in some corner or crevice, or under some ledge in the hive, and in due time the moth emerges.

Generally speaking, there are two broods of moths in the year, the first in May and June; the second, and most numerous, in August; though Prof. Cook, of Michigan University, says: "I have seen these moths in every month from May to September, and as I have proved by actual observation that they may pass from egg to moth in less than six weeks, I think under favorable conditions there may be even three broods in a year."

It is probable that the winter may be passed in any one of the various stages of the insect. Both larvae and pupae have been exposed to freezing temperature without harm to them. Prof. Cook quotes his friend Judge Andrews, as saying that no bees, black or Italian, will be troubled with these insects, so long as the combs are covered with bees. When the silken tubes are found, pick them out and crush out the larvae; kill all the moths found sitting about the outside of the hives. In day time they can be taken quite easily, and, as each female is capable of laying about three hundred eggs, the crushing of two or three moths a day is quite an item in getting rid of the pest.

The bees have quite a long list of insect and other enemies, but none are compared to the bee moth, either in antiquity or mischief. It was known to Europeans more than two thousand two hundred years ago, but to American beekeepers less than one hundred years.

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100 Doses One Dollar

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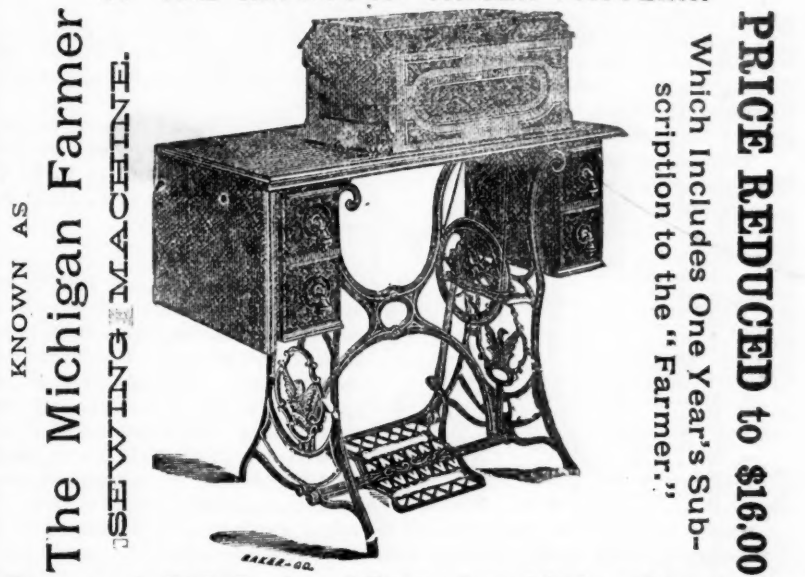
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The following dates have been selected
by Michigan breeders for sales of improved
stock:
JAN. 22—Holstein-Friesian cattle, at Holly, by
W. M. Sexton, Geo. H. Foster, auctioneer.
JAN. 23—J. C. Miller, Bancroft, Shawansee
County, Shorthorn Cattle, Poland-China Hogs,
Shropshire and Merino Sheep.

WHEAT.
The receipts of wheat in this market the
past week amounted to 45,581 bu., against
60,324 bu. the previous week, and 51,187
bu. for corresponding week in 1888. Shipments
for the week were 79,035 bu. against
55,349 bu. the previous week, and 8,653
bu. the corresponding week last year. The
stocks of wheat now held in this city
amount to 572,281 bu., against 915,519
bu. last week, and 1,236,649 bu. at the
corresponding date in 1888. The visible
supply of this grain on Jan. 12 was 37,498,541 bu.
against 37,923,374 the previous week, and
42,348,182 for the corresponding week in
1888. This shows a decrease from a year
ago the visible supply shows a decrease of 5,
749,591 bu.

The first two days of the past week were
marked by a great depression and a decline
in values. Since Tuesday, however, the
situation has been more favorable for holders,
with a tendency in values to work up-
wards. The reports from the Northwest are
favorable for higher prices, but at the east
and in foreign markets the feeling is weak
and depressed. Yesterday there was a slight
gain at Chicago, a sharp upward turn at
Duluth, where an advance of 1½¢ was re-
ported, and a slight rise at New York. Re-
ceipts of American wheat at Liverpool are
extremely light, but the difference between
this and former seasons seems to be made
up by a heavy increase in arrivals from
Russia, and a considerable in those from
India. California wheat is being offered
reliably at Liverpool, and the result is a
further decline in this grade.

The following table exhibits the daily closing
prices of spot wheat in this market from
Jan. 1st to Jan. 18th inclusive:

No. 1.	No. 2.	No. 3.
White.	Red.	Red.
Jan. 1.....	1.02	1.01 1/2
" 2.....	1.02 1/2	1.01 1/2
" 3.....	1.02 1/2	1.01 1/2
" 4.....	1.02 1/2	1.01 1/2
" 5.....	1.02 1/2	1.01 1/2
" 6.....	1.02 1/2	1.01 1/2
" 7.....	1.02 1/2	1.01 1/2
" 8.....	1.02 1/2	1.01 1/2
" 9.....	1.02 1/2	1.01 1/2
" 10.....	1.02 1/2	1.01 1/2
" 11.....	1.02 1/2	1.01 1/2
" 12.....	1.02 1/2	1.01 1/2
" 13.....	1.02 1/2	1.01 1/2
" 14.....	1.02 1/2	1.01 1/2
" 15.....	1.02 1/2	1.01 1/2
" 16.....	1.02 1/2	1.01 1/2
" 17.....	1.02 1/2	1.01 1/2
" 18.....	1.02 1/2	1.01 1/2

Trading in futures is largely confined to
May options in this market. There is little
doing, and dealers are merely doing a
"scalping" business on the ups and downs
of the market. Country customers are
scarce, and members of the Board are anx-
iously waiting for something to turn up.
Very little No. 1 white is being sold for
future delivery. That grade is not plenty,
and it would be risky to sell much of it.

For No. 2 red the closing prices on the
various days each day of the past week
were as follows:

Jan.	Feb.	May.
Saturday.....	98 1/2	1.03 1/2
Sunday.....	98 1/2	1.03 1/2
Tuesday.....	98 1/2	1.03 1/2
Wednesday.....	98 1/2	1.03 1/2
Thursday.....	98 1/2	1.03 1/2
Friday.....	98 1/2	1.03 1/2

No. 1 white for May sold yesterday at
\$1.05 1/2.

Kansas and Missouri report a large in-
crease in wheat acreage this year as com-
pared with last.

The trade journals are kicking because of
the June report, the Agricultural Bureau
gave the acreage of spring and winter
wheat at "about 36,000,000," and in none of
the subsequent monthly bulletins was there
conveyed any intimation that that
estimate was incorrect or in need of amend-
ment, yet in the report recently issued the
area is given at 37,336,138 acres. Now the
question is where were the additional 1,336,
138 acres between June and December? It
is a hard question to answer. We suggest
that the government statistician "Dodge" it.

In France the weather has been mild and
damp, causing vegetation to develop rather
too rapidly. The wheat plant so far has a
strong and healthy appearance. In the
country markets wheat has been generally
steady, though quiet, farmers being very
reserved in their offers.

The Mark Lane Express, of Monday,
says of the market:
"London is now the focus of the depres-
sion in the British grain trade. Owing to
the exceedingly heavy arrivals of Russian
wheat, samples of British and foreign wheats
were reduced to 1s. American prices are
still too high for business, but the recent
decline in New York looks as though the
United States was about to give way. Ordinary
sorts of flour were 6d. cheaper, with less inquiry."
The following table shows the quantity

Visible supply.....	Bushels.
On passage for United Kingdom.....	19,385,000
On passage for Continent of Europe.....	3,664,000
Total bushels Dec. 29, 1888.....	61,308,447
Total previous week.....	62,315,669
Total two weeks ago.....	61,385,388
Total Dec. 31, 1887.....	57,971,130

The estimated receipts of foreign and
home-grown wheat in the English markets
during the week ending Jan. 5 were
473,900 bu. less than the estimated
consumption; and for the eight weeks end-
ing Dec. 22 the receipts are estimated to
have been 8,027,976 bu. more than the con-
sumption. The receipts show an increase
for those eight weeks of 1,603,644 bu. as
compared with the corresponding eight
weeks in 1888.

Shipments of wheat from India for the
week ending Jan. 5, 1889, at per special
cable to the New York Produce Exchange,
aggregated 300,000 bu., of which 60,000
bu. were for the United Kingdom and
240,000 for the Continent. The shipments
for the previous week, as cable, amounted
to 50,000 bushels, of which all went to
the United Kingdom. The shipments
from that country from April 1,
the beginning of the crop year,
to Jan. 5, aggregated 29,640,000 bu.,
of which 17,120,000 bu. went to the United
Kingdom, and 12,520,000 bu. to the Con-
tinent. For the corresponding period in 1887
the shipments were 33,960,000 bu. The
wheat on passage from India Dec. 27 was
estimated at 3,168,000 bu. One year ago
the quantity was 1,108,000 bu.

The Liverpool market on Friday was
quoted dull with fair demand. Quotations
for American wheat are as follows: No. 2
winter, 7s. 9½d. per cental; No. 2 spring,
8s. 1d.; California No. 1, 7s. 8d. to 7s. 9d.

CORN AND OATS.

WHEAT.
The receipts of corn in this market the
past week were 34,120 bu., against 37,352
bu. the previous week, and 40,424 bu. for the
corresponding week in 1888. Shipments for
the week were 90,487 bu., against 82,417 bu.
the previous week, and 3,653 bu. for the
corresponding week in 1888. The visible
supply of corn in the country on Jan. 12
amounted to 18,942,242 bu., against 10,141,
000 bu. the previous week, and 6,737,490 bu.
at the same date in 1888. The visible sup-
ply shows an increase during the week indi-
cated of 1,701,242 bu. The stocks now held
in this city amount to 46,113 bu., against
61,954 bu. last week, and 80,077 bu. at the
corresponding date in 1888. As compared
with a year ago the visible supply shows an
increase of 5,104,752 bu. Corn is again
higher, and all grades, especially yellows,
quite firm. Some speculative trading is
being done. The firmness in corn rather
surprises dealers. No. 3 closed yester-
day at 35½¢ per bu. No. 2 at 34½¢, and
No. 4 at 33½¢. No. 2 yellow
closed at 37¢, and No. 3 at 35½¢ per bu.
In futures No. 2 for January delivery sold
at 35½¢ and February at 35½¢. Foreign
markets do not show any degree of firm-
ness, but all domestic markets are higher
than a week ago. At Chicago yesterday
the market opened strong, weakened a
little, and then rallied, closing firm at an
advance from the previous day. No. 2 spot
closed at 34½¢; No. 3 at 34½¢; January delivery
at 34½¢; March at 35½¢, and May at 37¢ per
bu. The New York market was irregular,
showing some weakness, but with increased
activity.

The Liverpool market yesterday was quoted
quiet with prices lower than a week ago.
No. 2 mixed western closed at 4s. 2d. per
cental; January delivery at 4s. 1½d.; Feb-
ruary, and March at 4s. 1d.

OATS.
The receipts at this point for the week
were 23,245 bu., against 30,094 bu. the
previous week, and 24,524 bu. for the cor-
responding week last year. The shipments for
the week were 4,677 against 12,297 the
previous week, and 2,381 bu. for same
week in 1888. The visible supply of this
grain on Jan. 12 was 8,434,108 bu., against
8,621,454 bu. the previous week, and 5,686,
040 at the corresponding date in 1888. The
visible supply shows a decrease of 187,346
bu. for the week indicated. Stocks held in
store here amount to 13,913 bu., against
21,370 bu. the previous week, and 23,794
bu. at the corresponding date in 1888. Oats
are firm owing to light arrivals and a
very steady demand. All grades are higher
than a week ago. No. 2 white advanced to
29½¢ per bu. yesterday, light mixed to
28½¢, and No. 2 mixed to 28¢. Stocks
held here are so light that if receipts do not
increase there will be a further advance.
It is getting to be understood in the trade
that the last crop was not as large as gen-
erally believed, and this is strengthening
holders. It is also probable that more oats
are being fed to stock by farmers than for-
merly, because of the short crop of clover, as
well as the belief, becoming more general
every day, that they are safer to feed than
corn if the animals are not being fattened.
At Chicago the market was stronger, ad-
vancing on late futures, with near deliveries
only steady. Prices are higher than a
week ago. Closing quotations were as
follows: No. 2 white, 24½¢; No. 3 white,
24½¢; No. 4 white, 24½¢; No. 2 mixed,
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Poetry.

ALICE YEATON'S SON.

GLOUCESTER, AUGUST, 1720.

The wind it wailed, the wind it moaned,
And the white caps flicked the sea;
"An' I would to God," the skipper groaned,
"I had not my boy with me!"

Snug in the stern sheets, little John
Laughed at the sea and the wind;
But the skipper's sunburnt cheek grew wan
As he watched the wicked day.

"Would we were at his mother's side!"
And the skipper's eyes were dim;
"God bless the child, if he'll bide,
What would become of him!"

"For me—my muscles are as steel,
For me let him stay where he will;
I might make shift upon an' a keel,
Until the break of day."

"But he, he is so weak and small,
So young, scarce learned to stand—
O'ly playing father of us all,
I trust him in Thy hand!"

"For Thou, who makest from on high
A sparrow fall—ah, one—
Surely, O Lord, Thou'lt have an eye
On Alice Yeaton's son!"

Then burst a storm to make one quail
Though housed from wind and waves—
Then who could tell about that gale
Most rise from watery graves!

Sudden it came, as sudden went;
Ere half the night was past,
The sea was white with waves spent,
And the stars shone overhead.

Now, as the morning mist grew thin,
The folk on Gloucester shore
Saw a little figure floating in
Secure, on a broken oar.

Up rose the cry, "A wreck! a wreck!
Pull, mate, and waste no breath!"
They knew it, though 'twas but a speck
Upon the edge of death!

Loud did they marvel in the town
At God, His strange decree,
That let the stalwart skipper drown,
And the little child go free!

—Thomas Bailey Aldrich.

"Tis better to laugh than to cry, dear,
A proverb you'll grant me to be true—
'Tis best to forget to be sad, dear,
The heartache is better than rue."

"Tis best to be glad for what is, dear,
Than to hope for the things which are not.
Tis braver to reckon the joys, dear,
Than the troubles which lead to your lot."

"Tis more to be good than to be great, dear,
To be happy is better than wise.
You'll find it you smile at the world, dear,
The world will smile back in your eyes."

—Christian Register.

Miscellaneous.

THE OTHER ENGLISHMAN.

"You are English, I take it, sir?"

It was clear to me that at any rate the speaker was. I was travelling alone. I had not fallen in with three Englishmen in as many weeks. And I turned to inspect the newcomer with a cordiality his smug and smutty face could not wholly repress. "I am," I answered, "and I am very glad to meet a fellow-countryman."

"You are a stranger here?" He did not take his eyes from me, but indicated by a gesture of his thumb the busy wharf below us, piled high with hundreds and thousands of frail crates full of oranges. From the upper deck of the San Miguel we looked directly down upon it, and could see all that was coming or going in the trim basin about us. The San Miguel, a steamer of the Segovia Quadra & Company's line, bound for several places on the coast southward, was waiting to clear out of El Guano, the harbor of Valencia, and I was waiting rather impatiently to clear out with her. "You are a stranger here?" he repeated.

"Yes; I have been in the town four or five days, but otherwise I am a stranger," I answered.

"You are not in the trade?" he continued. He meant the orange trade. "No, I am not; I am traveling for pleasure," I answered readily. "You will be able to understand that, though it is more than any Frenchman or Spaniard can." I smiled as I spoke, but he was not very responsive.

"It is a queer place to visit for pleasure," he said dryly, looking away from me to the busy throng about the orange crates. "Not at all," I retorted; "it is a lively town and quaint besides, and it is warm and sunny. I cannot say as much as that of Madrid, from which I came two or three weeks back."

"Come straight here?" he asked laconically. I was growing a trifle tired of his curiosity, but I answered, "No; I stayed a short time at Toledo and Aranjuez—oh, and at several other places."

"You speak Spanish?" "Not much. *Muy poco de castellano*," I laughed, calling to mind that maddening grime by which the Spanish peasant indicates that he does not understand, and is not going to understand you. He is a good fellow enough, is Sanchez Parza, but having made up his mind that you do not speak Spanish, the purest Castilian is after that not Spanish for him.

"You are going some way with us—perhaps to Cartagena?" persisted the inquisitor.

He laid a queer stress upon the last word, and with it shot me a sly glance—a glance so unexpected and so unpleasantly suggestive that I did not answer him at once. Instead, I looked at him more closely. He was a very young fellow, rather below than above the middle height, to all appearances not exceeding the atmosphere, was grumpy and oily, as if he had come straight from the engine-room. The whites of his eyes showed with untoward prominence. Seeing him, thus, I took a dislike to him.

"To Cartagena?" I answered brusquely. "No, I am not going to stay at Cartagena. Why should you suppose so, may I ask? Unless, indeed," I added, as another construction of his words occurred to me, "No, I think I want to see a bit of fighting." No, my friend, the fun might grow too furious. To explain this I should add that three days before there had been a mutiny among the troops at Cartagena. It was mentioned as the time in the English papers. An outlying fort was captured, and the

governor of the city killed before the attempt was suppressed. Of course this was in everyone's mouth, and I fancied that his question referred to it.

My manner or my words, however, disconcerted him. Without saying more he turned away, not going below at once, but standing on the main deck near the office in the afterpart. There was a good deal of bustle in that quarter. The captain, second officer, and clerk were there, giving and taking receipts and what not. He did not speak to them, but leaned against the rail close at hand. I had an uncomfortable feeling that he was watching me, and this I suppose gave rise to a strange shrinking from the man, which did not stay with me always, but returned from time to time.

Presently the dinner bell rang, and simultaneously the San Miguel moved out to sea. We were to spend the next day at Alicante, and the following one at Cartagena.

Dinner was not a cheerful meal. The officers of the ship did not speak English or French, and were not communicative in any language. Besides myself there were only three first class passengers. They were ladies—relatives of the newly appointed governor of Cartagena, and about to join him there. I have no doubt that they were charming and fashionable people, but their partiality for the knife in eating was calculated to prejudice them unfavourably in English eyes. Consequently, when I came on deck again, and the engineer—Sleigh, he told me his name was—sided up to me, I received him graciously enough. He proffered the omnipresent cigarette, and I provided him in turn with something to drink. He urged me to go down with him and see the engine-room, and after some hesitation I did so. You see, it was after dinner.

"I have pretty much my own way," he said boastfully. "They cannot do without English engineers. They tried once, and lost three boats in six months. In harbor, my time is my own. I have seven stokers under me, all Spaniards. They tried it once when I first came aboard, they did! But the first that out with his knife to me, I knocked on the head with a shovel. I have had none of their sauce since!"

"Was he much hurt?" I asked, scanning my companion. He was not big, I have said, and he slouched and shambled. But with all this there was an air of swaggering dare-devilry about him that gave color to his story.

"I don't know," he answered. "They took him to the hospital; he never came aboard again—that is all I know."

"I suppose your pay is good?" I suggested, timidly. To confess the truth, I felt myself at a disadvantage with him down there. The flaring lights and deep shadows, the cranks and pistons whirling at our elbows, the clank and din, and the valves that hissed at unexpected moments, were matters of every hour to him—he was imbued with a mean desire to profligate. As my after-dinner easiness abated, I regretted that he had induced me to come down.

He laughed—a short harsh laugh. "Pretty fair," he said, "with my opportunities. Do you see that jacket?"

"Yes."

"That is my shore-going jacket, that is," with a wink. "Here, look at it!"

I complied. It appeared on first sight to be an ordinary sailor's pea-coat; but, looking more closely, I found that inside were dozens of tiny pockets. At the mouth of each pocket a small hook was fixed to the lining.

"They are for watches," he explained, when he saw that I did not comprehend; "I get five francs over the price for every one I carry ashore to a friend of mine—duffy free, you understand."

I nodded to show that I did understand. "And which is your port for that?" I said, desiring to say something as I turned to ascend.

He touched me on the shoulder, and I found his face close to mine. His eyes were glittering in the light of the lamp that hung by the steam-gauge, with the same expression in them that had so perplexed me before dinner. "At Cartagena?" he whispered, bringing his face still closer to mine; "at Cartagena! Wait a minute, mate, I have told you something," he went on hoarsely.

"I am not too particular, and, what is more, I am not afraid! Ain't you going to tell me something?"

"I have nothing to tell you!" I stammered, staring at him.

"Ain't you going to tell me something, mate?" he repeated monotonously. His voice was low, but it seemed to me that there was a menace in it.

"I have not an idea what you mean, my good fellow," I said, and turning away I was going ready to my hand—I ran as nimbly as I could up the steep ladder, and gained the deck. Once there I paused and looked down. He was still standing by the lamp, staring at me, doubt and chagrin plainly written on his face. Even as I watched he rounded his lips to an oath; and then seemed to hold it over until he should be better assured of its necessity.

I thought no more of him by reason of his revelations. In a country where the head of the custom-house lives as a prince on the salary of a beggar, smuggling is no sin. But I was angry with him, and vexed with myself for the haste with which I had met his advances. I disliked and distrusted him. Whether he was mad, or took me for another smuggler—which seemed the most probable hypothesis—or had conceived some other false idea of me, whatever the key to the enigma of his manner might be, I felt sure I should do well to avoid him.

Like should make with like, and I am not a violent man. I should not feel at home in a duel, though the part were played with the most domestic of fire shovels, much less with a horrible thing out of a stove-hole. About half-past ten the San Miguel began to lurch to roll I took the hint and went below. The small saloon was empty, the lamp turned down. As I passed the steward's pantry I looked in and begged a couple of biscuits. I am a fairly good sailor, but when things are bad my policy is compressed in "berth and biscuits." With this provision against misfortune, I retired to my cabin, luxuriating in the knowledge that I was a fourth-berth one, and that I was its sole occupant.

In truth, I came near to chucking as I looked round it. I did not need a certain

experience I had had of a cabin three feet six inches wide by six feet three inches long, shared with a drunken Spaniard, to lead me to view with contentment my present quarters. A lamp in a glass case lighted at once the cabin and the passage outside, and so gave assurance that it would burn all night. On my right hand were an upper and lower berth, and on my left the same, with ample standing room between. A couch occupied the side facing me. The sliding door was supplemented by a curtain. I could hardly believe that this was my own. What joy to one who had known other things, to arrange this and stow that, and fearlessly to place in the rack sponge and toothbrush! What wonder if I blessed the firm of Segovia Quadra and Company as I sank back upon my well-hung mattress.

I sleep well at sea. The motion suits me. Even a quail of sea-sickness does not induce a pleasant drowsiness. I love a snug berth under the port-hole, and to hear the swish and wash of the water racing by, and the crisp splash as the vessel dips her fore-foot under, and always the complaint of the stout timbers as they creak and groan in the bowels of the ship.

Cosy and warm, with these sounds for a lullaby, I fell asleep, and dreamed that I was again down in the engine room, and sitting opposite to the other Englishman. "Haven't you come to tell me? Haven't you something to tell me?" he was droning monotonously, wagging his head from side to side the while, with that same perplexing smile on his face which had so distressed me waking. "Haven't you something to tell me?"

I strove to say that I had not, because I knew that if I did not satisfy him he would do some dreadful thing, though what I did not know. But I could not utter the words, and while I was still struggling with this horrible impotency, that surpassed any waking misery, the thing was done. I was bound hand and foot to the crank of the engine, and going up and down with it, up and down! Oh, it was fiendish cruelty! I wept and prayed to be released, but the villain took no heed of my prayers. He sat on, regarding my struggles with the same impassive smile. In despair I strove to think what it was he wanted—what it was he wanted—what it was—and—

How the ship was rolling! Thank heaven I was awake, or half awake. In my berth, at any rate, and not in that horrible engine-room. But how was this? The other Englishman was here too, standing by the lamp, looking at me. Or was it the other Englishman? It was some one who was not smiling, yet some one too who had a smug and smutty face. All the wonder in my mind had to do with this question. I lay for a while in an indolent mood, between sleeping and waking, watching him. Then I saw him reach across my feet to a little shelf above the berth. As he drew back something that was in his hand—the hand that rested on the edge of my berth—glittered as the light fell upon it, and, wide awake, I sprang to a sitting posture in my berth, and cried out with fear.

He was gone on the instant, and in the same second of time I was out of bed and on the floor. A moment's hesitation, and I drew aside the curtain, which was still shaking, however, in safety, and reached the spot where the ship lay. "San Miguel! Bota!" I shouted in the approved fashion of that coast. "San Miguel! Bota!"

The words had scarcely left my lips the second time when there was a rustling close to me. A single footstep sounded on the pebbles, and the light of a lantern was flashed in my face. With an exclamation I recoiled. As I did so two or three men sprang forward. Dazzled and taken by surprise, I had only an indistinct view of figures about me, and I was on the point of fighting or running, or making an attempt at both, when by good luck the clink of the steel accoutrements fell upon my ear.

By good luck! For they were police who had stopped me, and it is ill work resisting the police in Spain. "What do you require, gentlemen?" I asked in my best Spanish. "I am English."

"Perdone usted, señor," replied the leader, he who held the light. Will you have the goodness to show me your papers?"

"Con mucho gusto!" I answered, glad to find that things were no worse. I was going to produce my passport on the spot, when the sergeant, with a polite but imperative "This way!" directed me to follow him. I did so for a short distance, a door was flung open, and I found myself in a well-lighted, bare, furnished office, which I guessed was a custom-house post. The officer took his case behind a desk, and by a gesture of his cocked hat signified his readiness to proceed.

I had had to do with the police before, and should have guessed at the matter now, but I was aware of a suppressed excitement in the group around me, of strange glances which they cast at me, of a general drawing round their chief as he bent over my passport—things which seemed to indicate that this was no ordinary case of passport examination. Singular, too, was the disappointment they evinced when they found that my passport bore, besides the ordinary view, the signatures of the Vice-Consul and Alcalde at Valencia. Of course, as their faces fell, my spirits rose. A deep conviction and deeper disappointment took possession of them, and after I had answered half-a-dozen questions, the interview ended with the same "Perdone usted, señor," with which it had begun. I was bowed out; a boat was instantly procured for me, and in two minutes more I was climbing the ladder which hung from the San Miguel's quarters.

The first person whom I saw on board was Mr. Sleigh. He was lying on a bench in the saloon—confound his impudence!—drinking aguardiente and staring moodily at the table. I tried to pass him by and reach my cabin unnoticed, but on the last step of the companion I slipped. With a muttered oath at the interruption he looked up, and our eyes met.

Never did I see a man more astonished. He gazed at me as if he could not trust his sight; then started to his feet and executed a loud whistle. "Well, I never!" he cried, slapping his thigh with another oath, and speaking in a coarse, jubilant tone. "Well, I am blist, governor! So you did not go ashore after all! Here is a lark!"

I saw that he had been drinking. "I have been ashore," I answered coldly, my

everything he said to me seem a libel. Whatever it was I hated him for it, and I gave my feelings vent by answering sullenly, "No, I am not," and forthwith turning to my book again.

"I thought you travellers for pleasure wanted to see everything," he continued, "May be you know Alicante?"

"No, I don't," I answered snappishly. "And in this heat I do not want to know it!"

"All right, Governor, all right!" he replied. "Think it might be too hot for you perhaps? Ho! ho! ho!" And with a hoarse laugh that lasted him from stem to stern, and brought the blood to my cheeks, he left me. But I could see that he did not lose sight of me, and heard him chuckling at intervals at his own wit for fully half an hour afterwards. Though when the joke came in, I could not for the life of me determine.

Towards evening I did go ashore, slipping away at a time when he had gone below for a moment. I found a public walk in an avenue of palm trees which ran close by the sea. The palms were laden with clusters of yellow dates that at first sight were mere dried sea-weed than fruit. As darkness fell, and with it coolness, I sat down here and fell to watching the vessels in the port fade away one by one into the gloom, and little sparks of light take their places. A number of people were still out enjoying the air, but these were sauntering, one and all, in the indolent Southern fashion, so that on hearing the brisk step of a man approaching in haste, I looked up sharply. To my surprise, it was Sleigh, the engineer!

He passed close to me. I could not be mistaken, though he had put off his half-sloouching, half-impudent air, and was keenly on the alert, glancing from this side to that, as if he were following or searching for someone. For whom? I was one of half-a-dozen on a seat in deep shadow. If I was the person he wanted—and I had leapt, at sight of him, to that conclusion, and covered down in my place—he overlooked me, and went on. I sat some time longer after his step died away in the distance, my thoughts not altogether pleasant ones. But he did not return, and I went up to the Hotel Basso prepared to eat an excellent dinner.

The table d'hôte in the big whitewashed room was half finished. I was late. Perhaps this was why the waiters eyed me, as I took my seat, with attention; or it might be that the English were not numerous at Alicante, or not popular; or it might be that some one—Mr. Sleigh, for example—had been making inquiries for a foreigner—blonde, middle-sized, and speaking very little Spanish. Their notice made me uncomfortable. It seemed as if I could not have been the only man of the sea.

Nowhere indeed, for I was to have an other rencontre that night, with which he may or may not have had to do, but which must be told because of the light afterwards thrown upon it. It returned to my ship along the dark wharf, I there and there came upon figures loitering in the shadow of balconies or railings, and passing them I clutched my loaded stick more tightly. I got by all these, however, in safety, and reached the spot where the ship lay. "San Miguel! Bota!" I shouted in the approved fashion of that coast. "San Miguel! Bota!"

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I saw that he had been drinking. "I have been ashore," I answered coldly, my

dislike for him increased tenfold by his contradiction.

"Honor bright?" he exclaimed. "I have told you that I have been ashore," I replied indignantly.

He whistled again. "You are a cool hand," he said, looking me over with his thumbs in his pockets and a new expression in his face. "I might have known that, though, precious mild as you seemed! Dined at the Hotel Basso, I'll warrant you, and took your walk in the Alameda like any other man?"

"Yes, I did."

"So you did! O Lord! O Lord! So you did!" and again he contemplated me by the arm's length. I could construe his new expression now; it was one of admiration. "So you did, governor! And came aboard in the dark as bold as brass!"

That thwacked me a little. I thought myself that I had done rather a plucky thing in coming on board alone at that time of night. But I told him nothing, in his present state of the affair with the police. I merely answered, "I do not understand why I should not, Mr. Sleigh. And as I am rather tired, I will bid you good night."

"Wait a bit, governor. Not so fast," he said, in a lower tone, arresting me by a gesture as I was turning away. "Don't you think you are playing it a bit too high? You are a rare cool one, I swear, and there is nothing you are not fit to, I'll be bound! But two heads are better than one, mate—you take me—letting alone that it is every one for himself in this world. Do you rise to it?"

"No, I do not rise to it," I answered haughtily, as I drew back from his spirituous breath and leering eyes. He was more drunk than I had fancied.

"You don't?" Think again, mate," he said, almost as if he was pleading with me. "Don't play it too high."

"Don't talk such confounded nonsense!" I retorted angrily.

He looked at me yet a moment, a scowl dropping gradually over his face and not improving it. Then he answered, "All right, governor! All right! Pleasant dreams, and a pleasant waking at Cartagena!"

"I have no doubt I shall enjoy both," I replied, smarting under his mocking tone; and added, as his words brought another matter to my mind, "That is, if you will have the goodness not to disturb me as you did last night." He should not think he had escaped detection.

"It is your turn now," he replied more soberly. "I don't know what you are up to now. I did not disturb you last night."

"Same old, same old. Some one uncommonly like you, too."

"What did he do?" he asked, eyeing me as though he suspected a trap were being laid for him.

"I startled him," I answered irritably. "or I do not know what he would not have done. As it was, he did not do much. He took some biscuits."

"Took some biscuits!" He pretended that he did not believe me, and he did it so well that I began to doubt his guilt. "You must have been dreaming, mate."

"I could not dream the biscuits away," I retorted.

That stroke went home. He stood in silence, drawing patterns on the table with his finger and a puddle of spilled water. Gaily or innocently, he did not seem ashamed of himself, but rather puzzled and perplexed. Once or twice, without speaking, he glanced cunningly at me. But whether he wished to see how I took it, or really suspected me of fooling him, I could not tell.

"Good night!" I cried, impatiently; and I went to my cabin. I had told him my mind and that was enough. The last I saw of him, he was still standing at the table, drawing patterns on it with his finger.

(Concluded next week.)

Sharper than the Detective.

"I see that William and Robert Pinkerton are in town," remarked a gentleman in a corridor of one of St. Paul's hotels recently.

"Yes, they have a great detective agency, but I can tell you of one of their men who was not so clever, and whose case was worked up for him before he could find out anything about it."

"Well, he's hear the story."

"All right. But I don't care to use names, for some of the boys are in pulpits now, and they might feel hurt to call up one of their rather shady pranks; but here's the story:

"Down in the little city of Meadville, Pa., is Allegheny College, which is practically a Methodist institution, but which has had some of the brightest and wisest sets of students ever got together. At or just before Commencement for a number of years prior to last, a paper regularly made its appearance in the most mysterious manner."

"It was a little four page sheet, printed on one outside of half a dozen knew where, while the contributors were known to equal as few. Today that it was given faint idea of the contents of its columns. It called a spade a spade, and hit right and left at students and townspeople alike. It changed name annually and was called on different occasions the *Scorpion*, the *Hornet* and similar suggestive titles. It usually made its appearance in the night, a hundred or so copies being scattered in the street. But once, I remember, in the middle of an oration at Commencement, a student found one under the cushion of his seat. He waved it aloft and in a twinkling, to the horror of professors, half the cushions in the church had been turned to unearthing the *Wasp*. The paper had been handed down from generation to generation among wild but close-mouthed college men. When the *Hornet* was issued, however, it contained charges against a leading lawyer which caused the college authorities to set about unearthing the editors in a way they had never done before, and since then no paper has appeared."

"With the opening of the next term after the many shapings of the *Hornet*, there appeared a new student at Allegheny who gave the name of Kennedy. He was a short, thick-set fellow of 25 or 28, a blonde, and quite good-looking. He had little to say of himself, and when sized up by the different fraternity men none of them wanted him. It was soon discovered that he didn't know the first thing about Latin, or few other studies for that matter, that the professor knew it, and that there was some hoons

poos between them. Why he wasn't suspended at the end of the first week was a mystery to all but the *Hornet* men. They were on guard, and thought they were in danger. The man Kennedy got more than one student uproariously full, and when neither showed up for recitations for a day or two not a question was asked. Some had a greater capacity than Kennedy, however, and would get him drunk. When he was off on one of the carousals the trunk at his college boarding house was opened. By whom? Don't ask too many questions. As I say, the trunk was opened and there were found his instructions from the Pinkerton agency. He was a full-fledged detective after the *Hornet* men.

"The life that Kennedy lived the next two weeks must always live in his memory. Those who knew his occupation didn't give it away at once, but had their revenge all the same. Kennedy went over to the county fair and was most soundly thrashed by some one unknown. He went with a party to a lake eight miles out and had to foot it home. Money was no set to him, and more than one banquet he got up. The boys tied him, abused him, and then, making public who he was, Kennedy skipped by the light of the moon. Editors of the *Hornet* will know one Pinkerton detective anywhere if he is still on their force."

"What became of the *Hornet* editors?" "They were unearthened subsequently. One squealed. One who stood trial was acquitted of libel, and the matter was dropped. But some of them are prominent and wealthy men now."

How He Played Lady's Maid.

Mr. Goodman, in the sudden absence of his wife's maid, attempts to help her on with her new winter dress.

"He—You just see if I can't help you just as well as that damned English maid. Confound it, after I've helped you once you'll be wanting me to all the time, see if you don't."

She—Well, put it on carefully now over my head. Look out for my hair! I don't see what possessed me to do it up before I put this thing on, though I couldn't have raised my arms, I suppose, afterward.

Look out, there's a hook caught in my hair-pin. For heaven's sake, Charles, get it one way or the other, I'm stifling, and my hair will all be down. There, now that top steel is too high and the cushion interferes with it. Suppose you could get the cushion out? Right, pull it, anything! Don't you see it's eight o'clock? Get it out! Can't you do it? Pull it, I tell you! All right, now see if it looks too flat. Well, hook it then.

Yes, you can, too, it's only a patent hook. Snap it! There, now, hold it so I can get my arms into the sleeves—now wrap it there—do you take me for a contortionist? Oh, I never can get these sleeves on—grab hold of the arm-hole with both hands, Charles, and give it a good pull up into my shoulder—tell me if it begins to burst—does it? The veins in my hands will burst, I believe—open that window, will you—there now—give me the ends of that belt, will you—don't tell me, Charles, that you've twisted the waist and I've got to take it off again. Why, how could you have been so stupid? Where were your eyes? No, you can't pull it off that way—pull it off just as you do a glove—there, now, do exert yourself to get it right this time. Open that window a little wider, will you? What is

[illegible]

